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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/579,144	05/15/2006	Jordi Tormo i Blasco	5000-0171PUS1	6903
2292 7590 09/21/2007 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER MURRAY, JEFFREY H	
			ART UNIT	PAPER NUMBER
			1624	
			NOTIFICATION DATE	DELIVERY MODE
			09/21/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No. 10/579,144	Applicant(s) TORMO I BLASCO ET AL.	
	Examiner Jeffrey H. Murray	Art Unit 1624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 5-8, 10 and 11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 9, 12 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>5/15/2006</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. This action is in response to a response to a restriction requirement filed on September 10, 2007. Applicants' election of Group I is acknowledged. The applicant has selected their election expressly with traverse. There are thirteen claims pending and seven claims under consideration. Claims 5-8 and 10-11 are withdrawn from consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention. This is the first action on the merits. The application concerns (2,4,6-trifluorophenyl)-triazolopyrimidines, method for the production thereof, thereof for controlling harmful fungi, and substances containing the same.

Applicants have traversed the rejection on the grounds that there is no unity of invention because the special technical feature is the X variable. This argument is not found persuasive. According to the current application, the X variable may be a range of different groups. X can be is cyano, C₁-C₄-alkoxy, C₃-C₄-alkenyloxy, C₁-C₂-haloalkoxy or C₃-C₄-halo-alkenyloxy. Due to the array of different groups, which vary in size, shape, electronegativity, etc. there can be no special technical feature at this variable to support novelty and patentability. Therefore the restriction is deemed to be proper and the restriction is FINAL.

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Priority

2. Acknowledgment is made of Applicant's claim for foreign priority. This application is U.S. Application No. 10/579,144, filed May 15, 2006, which is a national stage entry of PCT/EP04/13063, filed November 18, 2004, which claims the benefit of German application No. 103 55 387.8, filed November 25, 2003.

Specification

3. The use of the trademark UNIPEROL has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

4. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any of the errors of which applicant may become aware of in the specification.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-4, 9, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pees et. al. (US 6,117,876) in view of Blasco et. al. (US 2004/0162428).

The current application recites a variety of specific (2,4,6-trifluorophenyl)-triazolopyrimidines, method for the production thereof, thereof for controlling harmful fungi, and substances containing the same.

8. The Pees et. al. reference teaches a group of compounds which are almost identical in scope to the current application. Within Pees et. al., are taught compounds as being used for a similar, if not identical, purpose as the proposed application. That is, the triazolopyrimidines are being used as antifungal agents and fungicides.

Pees et. al., also has an identical core structure to the current patent application with only one difference (see abstract, formula (I)). Pees et. al. has the (2,4,6-trifluorophenyl)-triazolopyrimidine ring system however its X variable is only permitted to be a halogen, not the cyano, alkoxy, haloalkoxy, or alkeneoxy groups of the current application.

Blasco et. al. also teaches a group of compounds which are almost identical in scope to the current application. Within Blasco et. al., (Formula I, abstract) are taught

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compounds as being used for a similar, if not identical, purpose as the proposed application. That is, the triazolopyrimidines are being used as antifungal agents and fungicides.

Blasco et. al. has an identical core structure to the current patent application with only one difference. Blasco et. al. has a (2,6-difluorophenyl)-triazolopyrimidine ring system whereas the current application has a (2,4,6-trifluorophenyl)-triazolopyrimidine ring system. It teaches the X variable can be a cyano, alkoxy, haloalkoxy, or alkeneoxy groups, as does the current application.

By looking at the different elements of the two prior art documents, namely the (2,4,6-trifluorophenyl)-triazolopyrimidine/(2,6-difluorophenyl)-triazolopyrimidine ring systems and the cyano, alkoxy, haloalkoxy, or alkeneoxy groups/halogen groups available for variable X, we can combine prior art elements to obtain an obvious result. All of the elements are present between the two applications in the prior art, the only difference is combining the (2,4,6-trifluorophenyl)-triazolopyrimidine ring system of Pees et. al. with the cyano, alkoxy, haloalkoxy, or alkeneoxy groups available for variable X of Blasco et. al.

All the prior art elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Double Patenting

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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10. Claims 1-4, 9, 12, and 13 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent Publication Application No's US 2006/211711, US 2006/0211573, and US 2007/0135453. Although the conflicting claims are not identical, they are not patentably distinct from each other because Claim 1 of U.S. Patent Publication Application No's US 2006/211711, US 2006/0211573, and US 2007/0135453 embraces the instant claims 1-4, 9, 12, and 13.

11. The instant claim differs from the copending claim by a more limited genus than the claim of the copending application. However, it would have been obvious to one having ordinary skill in the art at the time of the invention to select any of the species of the genus of the copending application, including those instantly claimed, because the skilled chemist would have the reasonable expectation that any of the species of the genus would have similar properties and, thus, the same use as taught for the genus as a whole. One of ordinary skill in the art would have been motivated to select the claimed compounds from the genus of the copending application since such compounds would have been suggested by the claims of the copending application. It has been held that a prior art disclosed genus of useful compounds is sufficient to render prima facie obvious a species falling within a genus. *In re Susi*, 440 F.2d 442, 169 USPQ 423, 425 (CCPA 1971), followed by the Federal Circuit in *Merck & Co. v. Biocraft Laboratories*, 847 F.2d 804, 10 USPQ 2d 1843, 1846 (Fed. Cir. 1989).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

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12. Claims 1-4, 9, 12, and 13 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/483,597, now '597, (US 2004/0162428) in view of Patani et. al.

13. The current application recites a variety of specific (2,4,6-trifluorophenyl)-triazolopyrimidines, method for the production thereof, thereof for controlling harmful fungi, and substances containing the same.

'597 teaches a group of compounds which are almost identical in scope to the current application. Within Blasco et. al., (Formula I, abstract) are taught compounds as being used for a similar, if not identical, purpose as the proposed application. That is, the triazolopyrimidines are being used as antifungal agents and fungicides.

'597 has an identical core structure to the current patent application with only one difference. Blasco et. al. has a (2,6-difluorophenyl)-triazolopyrimidine ring system whereas the current application has a (2,4,6-trifluorophenyl)-triazolopyrimidine ring system.

In medicinal chemistry, bioisosteres are substituents or groups with similar physical or chemical properties that may impart similar biological properties to a chemical compound. In drug design, the purpose of exchanging one bioisostere for another is to enhance that desired biological or physical properties of a compound without making significant changes in chemical structure (Ann.Rpts.Med.Chem. **21**, 283-291).

The patent reference, Patani et. al., page 3147-8, describes in detail the concept of bioisosteres. Patani states, "The bioisostere rationale for the modification of lead compounds is traced back to the observation by Langmuir in 1919 regarding the

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similarities of various physiochemical properties of atoms, groups, radicals, and molecules. Langmuir compared the physical properties of various molecules such as N_2 , and CO, N_2O and CO_2 and N_3^- and NCO^- and found them to be similar. On the basis of these similarities, he identified 21 groups of isosteres.

A further extension to this concept came about in 1925 with Grimm's Hydride Displacement Law. This law states: "Atoms anywhere up to four places in the periodic system before an inert gas change their properties by uniting with one to four hydrogens, in such a manner that the resulting combinations behave like pseudoatoms, which are similar to elements in the groups one to four places, respectively, to their right. Each vertical column below, according to Grimm, would represent a group of isosteres:"

C	N	O	F	Ne	Na
	CH	NH	OH	FH	-
		CH ₂	NH ₂	OH ₂	FH ₂ ⁺
			CH ₃	NH ₃	OH ₃ ⁺
				CH ₄	NH ₄ ⁺

Grimm's Hydride Displacement Law...outline a series of replacements which have been referred to as classical bioisosteres." (Patani et. al. p.3148)

Patani et. al. gives a solid reason to attempt to replace certain atoms with pseudoatoms. We then apply this logic to the '597 application. When we look at '597, we see that the compounds differ only by a single fluorine atom in the 4-position of the phenyl ring with the compounds of the current application. The difference between the (2,6-difluorophenyl)-triazolopyrimidine ring system of '597 and the (2,4,6-trifluorophenyl)-triazolopyrimidine ring system in the present application is the only section of the molecule that differs. When we take into account Patani et. al., we see

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that the substitution of a hydrogen by a fluorine is one of the more commonly employed monovalent isoteric replacements. (page 3150, 4th para.) This allows us to presume that if we were to replace the 4-hydro group with a 4-fluoro group on the (2,6-difluorophenyl)-triazolopyrimidine ring system, we would get similar physiochemical properties.

It would have been obvious to one skilled in the arts at the time of the invention to try to replace the 4-hydro with a 4-fluoro on the (2,6-difluorophenyl)-triazolopyrimidine ring system. '597 combined with Patani et. al. show the necessary teachings that suggest replacing the 4-hydro with a 4-fluoro on the (2,6-difluorophenyl)-triazolopyrimidine ring system to attempt to enhance activity and afford a positive benefit from the replacement.

Conclusion

14. Claims 1-4, 9, 12, and 13 are rejected.

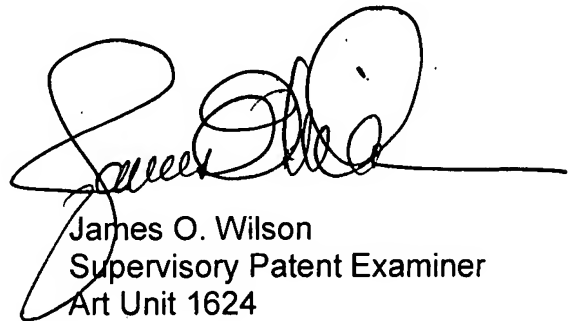
15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey H. Murray whose telephone number is (571) 272-9023. The examiner can normally be reached on Mon-Thurs. 7:30-6pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisors, James O. Wilson can be reached at 571-272-9023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a US PTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JHM



James O. Wilson
Supervisory Patent Examiner
Art Unit 1624